IN THE CLAIMS:

All of the pending claims 1-3, 15, 63 and 64 are set forth below. The status of each claims is indicated with one of (currently amended), (previously presented) or (cancelled). Please AMEND claims 1 and 15 in accordance with the following:

1. (currently presented) A method for optical transmission adopting dispersion compensation, comprising:

(a) providing an optical fiber transmission line composed of a plurality of segments each having a length falling within a predetermined range, said plurality of segments including a plurality of fiber types, and an optical fiber having a specific one of the optical fiber types being applied to at least one of said plurality of segments;

(b) providing an optical transmitter for supplying an optical signal to said optical fiber transmission line at one end of said optical fiber transmission line;

(c) providing an optical receiver for receiving said optical signal from said optical fiber transmission line at the other end of said optical fiber transmission line;

(d) providing an optical amplifier between any two adjacent ones of said segments;

(e) determining ~~whether a~~where said specific one of the optical fiber types exists in the optical transmission line; and

(f) providing a dispersion compensator responsive to said determination, in each of said optical transmitter, said optical receiver, and said optical amplifier according to whether an optical fiber type of an optical fiber transmission line segment immediately downstream of said optical transmitter is said specific one of the optical fiber types or not and a dispersion value of said optical fiber transmission line segment immediately downstream of said transmitter, according to whether an optical fiber type of an optical fiber transmission line segment immediately upstream of said optical receiver is said specific one of the optical fiber types or not and a dispersion value of said optical fiber transmission line segment immediately upstream of said optical receiver, and according to whether an optical fiber type of an optical fiber transmission line segment immediately upstream of said optical amplifier is said specific one of the optical fiber types or not and dispersion values of optical fiber transmission line segments immediately upstream and downstream of said optical amplifier wherein,

at least one dispersion compensator provided in at least one of said optical transmitter, said optical receiver and said optical amplifier provides a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range.

2. (previously presented) A method according to claim 1, wherein said fiber types of

said optical fiber transmission line include a single-mode fiber type having a zero-dispersion wavelength of about 1.3 μm and a dispersion shifted fiber type having a zero-dispersion wavelength of about 1.55 μm.

3. (previously presented) A method according to claim 2, further comprising:

providing a plurality of optical amplifiers, wherein,

said dispersion compensator is not provided in said optical transmitter in a case wherean optical fiber type of an optical fiber transmission line segment immediately downstream of said optical transmitter is said specific one of the optical fiber types and is said dispersion shifted fiber type;

a dispersion of a dispersion compensator provided in one of said plurality of optical amplifiers is determined according to dispersion values of optical fiber transmission line segments immediately upstream and downstream of the optical amplifier; and

an optical fiber type of an optical fiber transmission line segment immediately upstream of the optical amplifier is said dispersion shifted fiber type and an optical fiber type of an optical fiber transmission line segment immediately downstream of the optical amplifier is said single-mode fiber type.

4-14. (cancelled)

15. (currently amended) A system for optical transmission adopting dispersion compensation, comprising:

an optical fiber transmission line composed of a plurality of segments each having a length falling within a predetermined range, said plurality of segments including a plurality of fiber types; and an optical fiber having a specific one of the optical fiber types being applied to at least one of said plurality of segments

an optical transmitter supplying an optical signal to said optical fiber transmission line from one end thereof;

an optical receiver receiving said optical signal from the other end of said optical fiber transmission line;

an optical amplifier provided between any two adjacent ones of said segments;

a determining ~~unit determining whether a~~where said specific one of the optical fiber types exists in the optical transmission line; and

at least one dispersion compensator provided in response to said determining unit in at least one of said optical transmitter, said optical receiver, and said optical amplifier according to

whether an optical fiber type of an optical fiber transmission line segment immediately downstream of said optical transmitter is said specific one of the optical fiber types or not and a dispersion value of said optical fiber transmission line segment immediately downstream of said optical transmitter, according to whether an optical fiber type of an optical fiber transmission line segment immediately upstream of said optical receiver is said specific one of the optical fiber types or not and a dispersion value of said optical fiber transmission line segment immediately upstream of said optical receiver, and according to whether an optical fiber type of an optical fiber transmission line segment immediately upstream of said optical amplifier is said specific one of the optical fiber types or not and dispersion values of optical fiber transmission line segments immediately upstream and downstream of said optical amplifier wherein,

said dispersion compensator provides a dispersion selected from a plurality of stepwise varying dispersions determined according to said predetermined range.

16-62. (cancelled)

63. (previously presented) A method according to claim 2, further comprising:

providing a plurality of optical amplifiers, wherein,

said dispersion compensator is not provided in said optical receiver in a case where an optical fiber type of an optical fiber transmission line segment immediately upstream of said optical receiver is said specific one of the optical fiber types and is said dispersion shifted fiber type;

a dispersion of a dispersion compensator provided in one of said plurality of optical amplifiers is determined according to dispersion values of optical fiber transmission line segments immediately upstream and downstream of the optical amplifier; and

an optical fiber type of an optical fiber transmission line segment immediately upstream of the optical amplifier is said single-mode fiber type and an optical fiber type of an optical fiber transmission line segment immediately downstream of the optical amplifier is said dispersion shifted fiber type.

64. (previously presented) A method according to claim 2, further comprising:

providing a plurality of optical amplifiers, wherein,

a dispersion compensator is not provided in a first optical amplifier in a case where an optical fiber type of an optical fiber transmission line segment immediately upstream of the first optical amplifier is said specific one of the optical fiber types and is said dispersion shifted fiber type;

a dispersion of a dispersion compensator provided in a second optical amplifier is determined according to dispersion values of optical fiber transmission line segments immediately upstream and downstream of the second optical amplifier; and

an optical fiber type of an optical fiber transmission line segment immediately upstream of the optical amplifier is said single-mode fiber type and an optical fiber type of an optical fiber transmission line segment immediately downstream of the optical amplifier is said dispersion shifted fiber type.